CLAIMS

I claim:

1.   A method of performing intelligent data pre-staging for a job submitted to a compute environment, the method comprising:

determining availability of compute resources including availability timeframes to process the submitted job;

determining data requirements for processing the job; and

determining a co-allocation in time reservation.

2.   The method of claim 1, wherein the data requirements relate to a quantity of data and a speed of migration of the data to the compute resources.

3.   The method of claim 1, wherein the data requirement for processing the job are at least one of: network information, network speed, faults, statistical fluctuation, delivered bandwidth by the network, size, and any issues, you basically have to ramp up the initialize step, a data transfer step, and a prologue step, a termination step which completes the record and verifies the successful transfer of data.

4.   The method of claim 1, wherein the compute resources must be available prior to the completion of the data staging step.

5.   The method of claim 1, wherein determining the co-allocation in time reservation further comprises:

(1)   requesting the resources for the first step in the job process;

(2)   calculating existing resource guarantees and reservations already in place to create an availability range list;

(3)   converting the availability range list into a start range list;

(4)   requesting another resource and returning to step (2).

(5)   shifting the start ranges by the offset and performing an intersection operation on the combination start range;

(6)   shifting it back by the negative of the offset the resulting information provides when to start each reservation;

(7)   presenting the final list of possible starting times for a reservation to a user for selection; and

(8)   upon receiving a user selection of a reservation start time, shifting everything back and reserving he resources for the appropriate start time.

6.   The method of claim 5, wherein the range list indicates all the availability time frames.

7.   A system for performing intelligent data pre-staging for a job submitted to a compute environment, the system comprising:

a module configured to determine availability of compute resources including availability timeframes to process the submitted job;

a module configured to determine data requirements for processing the job; and

a module configured to determine a co-allocation in time reservation.

8.   The system of claim 7, wherein the data requirements relate to a quantity of data and a speed of migration of the data to the compute resources.

9.   The system of claim 7, wherein the data requirement for processing the job are at least one of: network information, network speed, faults, statistical fluctuation, delivered bandwidth by the network, size, and any issues, you basically have to ramp up the initialize step, a data transfer step, and a prologue step, a termination step which completes the record and verifies the successful transfer of data.

10.   The system of claim 7, wherein the compute resources must be available prior to the completion of the data staging.

11.   The system of claim 7, wherein the module configured to determine the co-allocation in time reservation further:

(1)   requests the resources for the first step in the job process;

(2)   calculates existing resource guarantees and reservations already in place to create an availability range list;

(3)   converts the availability range list into a start range list;

(4)   requests another resource and returning to step (2).

(5)   shifts the start ranges by the offset and performing an intersection operation on the combination start range;

(6)   shifts it back by the negative of the offset the resulting information provides when to start each reservation;

(7)   presents the final list of possible starting times for a reservation to a user for selection; and

(8)   upon receiving a user selection of a reservation start time, shifts everything back and reserving he resources for the appropriate start time.

12.   The system of claim 11, wherein the range list indicates all the availability time frames.

13.   A computer-readable medium containing instructions for controlling a computing device to perform intelligent data pre-staging for a job submitted to a compute environment, the instructions comprising:

determining availability of compute resources including availability timeframes to process the submitted job;

determining data requirements for processing the job; and

determining a co-allocation in time reservation.

14.   The computer-readable medium of claim 13, wherein the data requirements relate to a quantity of data and a speed of migration of the data to the compute resources.

15.   The computer-readable medium of claim 13, wherein the data requirement for processing the job are at least one of: network information, network speed, faults, statistical fluctuation, delivered bandwidth by the network, size, and any issues, you basically have to ramp up the initialize step, a data transfer step, and a prologue step, a termination step which completes the record and verifies the successful transfer of data.

16.   The computer-readable medium of claim 13, wherein the compute resources must be available prior to the completion of the data staging step.

17.   The computer-readable medium of claim 13, wherein the step of determining the co-allocation in time reservation further comprises:

(1)   requesting the resources for the first step in the job process;

(2)   calculating existing resource guarantees and reservations already in place to create an availability range list;

(3)   converting the availability range list into a start range list;

(4)   requesting another resource and returning to step (2).

(5)   shifting the start ranges by the offset and performing an intersection operation on the combination start range;

(6)   shifting it back by the negative of the offset the resulting information provides when to start each reservation;

(7)   presenting the final list of possible starting times for a reservation to a user for selection; and

(8)   upon receiving a user selection of a reservation start time, shifting everything back and reserving he resources for the appropriate start time.

18.   The computer-readable medium of claim 17, wherein the range list indicates all the availability time frames.